



Autism Spectrum Disorders and Other Developmental Disabilities

About one in six children in the U.S. has one or more developmental disabilities or delays, such as attention-deficit/hyperactivity disorder, autism spectrum disorder, cerebral palsy, hearing loss, intellectual disability, and vision impairment. Developmental disabilities are a group of conditions characterized by an impairment in physical, learning, language, or behavior areas.

Autism spectrum disorders are a type of developmental disability that can cause significant social, communication, and behavioral challenges. CDC estimates that 1 in 88 children has been identified as having an autism spectrum disorder.

NCBDDD's Division of Birth Defects and Developmental Disabilities tracks and researches autism spectrum disorders and other developmental disabilities. Tracking monitors the change in the number of children with these conditions, while research identifies risk factors. Overall, these activities better inform prevention policy and programs. In addition, through the "Learn the Signs. Act Early." health education program for parents, health care providers, and early educators, we promote early identification of children with autism and other developmental disabilities so children and families can receive services and supports as early as possible.

2012 Accomplishments

- Released updated prevalence report from the Autism and Developmental Disabilities Monitoring (ADDM) Network estimating that 1 in 88 children has been identified as having an autism spectrum disorder.
- Engaged new and existing partners and worked with media to promote important public health messages around the ADDM data.
- Developed a Community Report so that communities can use the ADDM data to plan for services and understand where improvements can be made to help these children.
- Completed the first phase of the Study to Explore Early Development (SEED) and launched a second phase to gather additional data and be able to answer more questions about autism spectrum disorder.
- Disseminated a summary of the proceedings and recommendations from the February 2011 "Workshop on U.S. Data to Evaluate Changes in the Prevalence of Autism Spectrum Disorders" and began new data analyses based on recommendations.

2012 Accomplishments (continued)

- Provided ongoing scientific consultation and data benchmarks for the Healthy People 2020 objectives around developmental disabilities, including objectives on developmental delay, cerebral palsy, and autism spectrum disorder.
- Released an online continuing education version of the Autism Case Training (ACT) Curriculum. This course provides information on fundamental components of identifying, diagnosing, and managing autism spectrum disorders through real-life scenarios for healthcare professionals.
- Expanded the reach of “Learn the Signs. Act Early.” and strengthened capacity in states for early identification through the Act Early Ambassadors Program. In 2012, 25 Ambassadors focused on improving early identification of developmental disabilities in their state. For example, one worked with partners to print and distribute customized English and Spanish “Learn the Signs. Act Early.” materials, which were made available to families in Head Start and Early Head Start programs statewide; others worked to integrate the ACT Curriculum into residency training at children’s hospitals, medical schools and Leadership Education in Neurodevelopmental and Related Disabilities (LEND) programs.

Looking to the Future

Like the many families living with autism spectrum disorders and other developmental disabilities, NCBDDD’s Division of Birth Defects and Developmental Disabilities considers these conditions an important public health concern.

We are committed to the important work of understanding these conditions. The ADDM Network will continue tracking the prevalence of autism spectrum disorders among 8-year and 4-year-old children to understand more about which children are more likely to have autism spectrum disorders, at what age they are likely to be diagnosed, and whether progress has been made in diagnosing children with autism spectrum disorders early. We will continue leveraging the infrastructure of the ADDM Network to track other developmental disabilities, such as cerebral palsy, the most common motor disability of childhood.

Mary Elizabeth’s Story



Mary Elizabeth is the mother of two children with autism spectrum disorders.

To read Mary Elizabeth’s story, visit: www.cdc.gov/ncbddd/autism/stories.html

Looking to the Future (continued)

NCBDDD's Division of Birth Defects and Developmental Disabilities will also engage with partners to understand more about disparities in the identification of autism spectrum disorders among different groups of children and to explore parents' experiences with autism spectrum disorders screening, identification, and referral to services.

NCBDDD's Division of Birth Defects and Developmental Disabilities will continue to learn about factors that may put children at risk for autism spectrum disorders and other developmental disabilities through SEED.

NCBDDD's Division of Birth Defects and Developmental Disabilities will continue to work with federal agencies and other partners to disseminate materials on early identification to healthcare professionals, early childhood educators, and parents of young children. Working with partners experienced in developing training for early childhood professionals, we will develop and implement a continuing education, web-based training for early childhood educators to help facilitate their role in early identification of autism spectrum disorders and other developmental disabilities.

Notable Scientific Publications

Wiggins LD, Baio J, Schieve L, Lee LC, Nicholas J, Rice CE. Retention of autism spectrum diagnoses by community professionals: findings from the autism and developmental disabilities monitoring network, 2000 and 2006. *Journal of Developmental and Behavioral Pediatrics*. June 2012;33(5):387-95.

Kancherla V, Amendah DD, Grosse SD, Yeargin-Allsopp M, Van Naarden Braun K. Medical expenditures attributable to cerebral palsy and intellectual disability among Medicaid-enrolled children. *Research in Developmental Disabilities*. May-Jun2012. 33(3):832-40.

Schieve LA, Rice C, Yeargin-Allsopp M, Boyle CA, Kogan MD, Drews C, and Devine O. Parent-Reported Prevalence of Autism Spectrum Disorders in US-Born Children: An Assessment of Changes within Birth Cohorts from the 2003 to the 2007 National Survey of Children's Health. *Maternal and Child Health Journal*, April 2012, Volume 16, Issue 1 Supplement, pp 151-157.

Did You Know?

- Recent estimates in the United States show that about one in six, or about 15%, of children aged 3 through 17 years have one or more developmental disabilities.
- Medical costs for children with autism spectrum disorders are estimated to be six times higher than for children without autism spectrum disorders.
- In addition to medical costs, intensive behavioral interventions for children with autism spectrum disorders cost \$40,000 to \$60,000 per child per year.
- Medical costs for children with cerebral palsy are estimated to be 13 times higher than for children without cerebral palsy.

**Autism Spectrum Disorders and Other Developmental Disabilities
Annual Report, Fiscal Year 2012**

Notable Scientific Publications (continued)

CDC. Prevalence of Autism Spectrum Disorders — Autism and Developmental Disabilities Monitoring Network, 14 Sites, United States, 2008. *Surveillance Summaries, Morbidity and Mortality Weekly Report*; March 30, 2012/61(SS03);1-19.

Parner ET, Baron-Cohen S, Lauritsen MB, Jørgensen M, Schieve LA, Yeargin-Allsopp M, Obel C. Parental Age and Autism Spectrum Disorders. *Annals of Epidemiology*, Volume 22, Issue 3, March 2012, Pages 143–150.

Schendel DE, Diguseppi C, Croen LA, Fallin MD, Reed PL, Schieve LA, et al. The Study to Explore Early Development (SEED): A Multisite Epidemiologic Study of Autism by the Centers for Autism and Developmental Disabilities Research and Epidemiology (CADDRE) Network *Journal of Autism and Developmental Disorders*. February 17, 2012.

Peacock G, Amendah D, Ouyang L, Grosse S. Autism spectrum disorders and health care expenditures: The effects of co-occurring conditions. *Journal of Developmental and Behavioral Pediatrics*, 2012 Jan;33(1):2-8.

Peacock G, Lin SC. Enhancing early identification and coordination of intervention services for young children with autism spectrum disorders: Report from the Act Early Regional Summit Project. *Disability and Health Journal*, 2012 Jan;5(1):55-9.

Schieve LA, Boulet SL, Blumberg SJ, Kogan MD, Yeargin-Allsopp M, Boyle CA, Visser SN, & Rice C. Association between parental nativity and autism spectrum disorder among US-born non-Hispanic white and Hispanic children, 2007 National Survey of Children's Health. *Disability and Health Journal*, 2012 Jan;5(1):18-25.

Maenner MJ, Benedict RE, Arneson CL, Yeargin-Allsopp M, Wingate MS, Kirby RS, Van Naarden Braun K, & Durkin MS. Maenner MJ, Benedict RE, Arneson CL, Yeargin-Allsopp M, Wingate MS, Kirby RS, Van Naarden Braun K, Durkin MS. Children with cerebral palsy: Racial disparities in functional limitations *Epidemiology*, 2012 Jan;23(1):35-43.

To view the annual report online, visit:
www.cdc.gov/ncbddd/2012AnnualReport

For more information, visit:
www.cdc.gov/Autism

www.cdc.gov/ncbddd/DevelopmentalDisabilities